PUBLIC PARTICIPATION SUMMARY DOCUMENTATION

RADIOACTIVE MATERIAL LICENSE UT2300249 LICENSE AMENDMENT #16

The License amendment makes changes to License Conditions 4, 22, 31, 32.E, 39.E, 43, 73.A.iii, 73.A.iv, 73.B, 76, and 77.

On May 16, 2013, Energy*Solutions* (ES) submitted a "Request for Administrative Corrections to Radioactive Materials License #UT2300249, conditions 32.E and 76" (CD13-0144). Originally, the Licensee had requested a change to license condition 32.E in a letter dated October 24, 2012 (CD12-0275). However at that time, the Division of Radiation Control (DRC) did not make the minor change to Condition 32.E in identifying the Corporate Radiation Safety Officer (CRSO) versus the Radiation Safety Officer as part of License Amendment #15. Both the DRC and ES agreed to make these changes during the next license amendment.

On August 22, 2013, ES submitted a request to modify License Conditions 22, 31, 39.E, and 77 (CD13-0238). The DRC reviewed the request and, in a meeting on September 4, 2013 with ES' staff, discussed and proposed revisions to the requested changes. Based on this meeting, ES submitted on September 19, 2013 (CD13-0255), additional revisions to the initial request. The DRC has reviewed the additional revisions and determined they would be adequate to meet occupational and public safety requirements[1].

In addition, based on correspondence regarding the 2013 annual surety review, the Director is proposing a revision to the language in License Condition 43. Specifically, condition 43 is under the License heading "Construction Activities" and the current language involves surety information. Therefore, for consistency, Condition 43 has been revised and language has been added to License Condition 73.A which is under the License heading "Financial Assurance/Closure." The DRC added language in License Condition 73.A for clarity purposes regarding information that is required to be submitted as part of the annual surety report.[2] Language for License Condition 43 stipulates funding must be provided prior to construction of clay liner between Class A and Class A North cells.

The Director has determined the changes to Condition 4, 31, 32.E, 43, 73.A.iii, and iv, 73.B, and 76 are minor, administrative in nature, provide more explicit language, do not include monitoring, or sampling, and is an increase in contingency costs affecting Surety. Changes to Conditions 22, 39.E, and 77, are determined to be a reduction in monitoring, therefore are considered major in accordance with R313-17-2, and thus a public comment period was conducted by the DRC.

---

[1] Amendment 16 Statement of Basis, November, 2013.

[2] Example – Revised 2012 annual surety report, February 20, 2014 (DRC-2014-001884).

In conclusion, License Amendment #16 makes changes to License Condition 4, 22, 31, 32.E, 39.E, 43, 73.A.iii and iv, 73.B, 76 and 77. A summary of the proposed changes to Radioactive Materials License UT2300249, Amendment #16 and the corresponding responses to comments follow.

Summary of License Condition Changes

Changes to RML:

1) Added language to Condition 4 to indicate that the Radioactive Materials License (RML) UT2300249 is "Under Timely Renewal"
2) Condition 22 reduced the frequency of some of the routine radiological surveys from weekly to monthly and removed the rollover from the list;
3) Condition 31 removed the word "Acting" from the term "Acting RSO";
4) Condition 32.E. changed Radiation Safety Officer (RSO) to Corporate Radiation Safety Officer (CRSO);
5) Condition 39.E. removed the 40 mrem/hr limit and replaced it with the posting and dose limit requirements of a Radiation area and a "High Radiation Area" that are found in EnergySolutions standard operating procedures (SOPs);
6) Changed Conditions 43 to read: Construction of the clay liner for the Class A West (CAW) embankment between the Class A (CA) and Class A North (CAN) embankments, or receipt of waste volumes exceeding the total waste capacity of the CA and CAN embankments (minus the volumes generated during facility decommissioning) is prohibited until the Licensee funds the financial surety for decommissioning of the CAW embankment as designed and approved;
7) Changed language in Condition 73.A.iii. to read: Updates to the cost estimate for decommissioning the Class A West (CAW) embankment to ensure the cost estimate remains current in the event that the Director determines the Class A (CA) and Class A North (CAN) embankment must be closed as a single embankment using the approved design of the CAW embankment. The cost estimate must meet the requirements of License Condition 73;
8) Changed language in Condition 73.A.iv. to read: Updates to cost estimate for decommissioning the CA and CAN embankments as separate embankments using the approved designs for each separate embankment. The surety shall be based on the approved cost estimate for the CA and CAN embankments until the Director determines it is no longer feasible for the CA and CAN embankments to be closed separately. At that time, the surety shall be based on the approved cost estimate provided for License Condition 73.A.iii. The update to the cost estimate for the CA and CAN embankments must include funding to move excess materials that have been placed outside of the approved CA design to the CAN embankment, as well as all other costs associated with closing the CA and CAN embankments separately. The cost estimate must meet the requirements of License Condition 73;
9) Condition 73.B. changed surety contingency value from 11% to 15% based on R313-22-35-3(g) and NUREG 1757, Volume 3;

10) Deleted from Condition 76: parenthetical statement "but not including any part of that Account from returns on investment"; and
11) Removed from Condition 77: the 40 mrem/hr limit and replace it with the posting and dose limit requirements of a "Radiation Area" and a "High Radiation Area" that are found in EnergySolutions SOPs.

Comments and Responses to Comments

Because the changes to License Conditions 22, 39.E, and 77 were categorized as a major amendment as per R313-17-2(1)(a)(i), the Division of Radiation Control (DRC) conducted a public comment period from November 14, 2013 to December 16, 2013 to receive written comments. Altogether the DRC received five comments from EnergySolutions, LLC. Each of the comments received are listed below in italics, followed by a DRC response.

Letter submitted by Sean McCandless on behalf of Dan Shrum of EnergySolutions LLC. dated December 2, 2013. A total of five different comments were included in EnergySolutions' letter.

Dear Mr. Lundberg:
In response to an invitation for public response published by the Utah Division of Radiation Control on November 15, 2013, EnergySolutions hereby submits comments to the proposed amendment #16 to Utah Radioactive Material License #UT 2300249. EnergySolutions concurs with the proposed revisions to Conditions 22, 39.E, 73.A.iii, 76, 77, and 89.W. However, as justified below, EnergySolutions requests that the Division change Conditions 43 and 73.

EnergySolutions' Comment # 1:

1) CONDITION 43:
Division Proposed Amendment: *Construction of the clay liner for the Class A West (CAW) embankment between the Class A (CA) and Class A North (CAN) embankments, or receipt of waste volumes exceeding the total waste capacity of the CA and CAN embankments (minus the volumes generated during facility decommissioning) is prohibited until the Licensee funds the financial surety for decommissioning of the CAW embankment as designed and approved. ~~The Licensee shall, in the 2012 Surety submittal, provide cost estimates based on the Class A West design submitted on Drawings 10014 C01 through C06 listed in Table 2C of the GWQDP as required in License Condition 73. The Licensee shall provide surety funding as approved by the Director and as per UAC R313-25-31(4) prior to commencing construction of the clay liner in the area between the previously approved Class and Class A North embankments or by the approval of the RML Renewal for UT2300249 submitted March 6, 2013 whichever comes first.~~*

EnergySolutions' Proposed Amendment: *~~Construction of~~ Waste placement on the clay liner for the Class A West (CAW) embankment between the Class A (CA) and Class A*

North (CAN) embankments, or receipt of waste volumes exceeding the total waste capacity of the CA and CAN embankments (minus the volumes generated during facility decommissioning) is prohibited until the Licensee funds the financial surety for decommissioning of the CAW embankment as designed and approved. ~~*The Licensee shall, in the 2012 Surety submittal, provide cost estimates based on the Class A West design submitted on Drawings 10014 C01 through C06 listed in Table 2C of the GWQDP as required in License Condition 73. The Licensee shall provide surety funding as approved by the Director and as per UAC R313-25-31(4) prior to commencing construction of the clay liner in the area between the previously approved Class and Class A North embankments or by the approval of the RML Renewal for UT2300249 submitted March 6, 2013 whichever comes first.*~~

EnergySolutions' Comment: *No formal construction activities have yet been undertaken to combine the Class A (CA) and Class A North (CAN) embankments into the Class A West (CAW) configuration approved in license amendment 14. Until such time as these embankments are united, closure as separate entities is more cost effective and remains consistent with the Division's response to comments when issuing amendment 14. As recognized by the Division, the appropriate and preferred alternative for current consideration in the surety cost estimate is that of the historically-approved closure plans developed separately for the CA and CAN embankments.*

In fact, EnergySolutions notes that even after complete construction of the liner between the legacy CA and CAN embankments (as contemplated in the Division's proposed amendment), selection by an independent contractor of the optimal premature closure scenario will still likely involve separate closure of CA and CAN. This is due to the fact that clay liner construction, in and of itself, does not create an irreversible commitment to build out the full CAW configuration. Waste placement on the clay liner, on the other hand, clearly creates a more reasonable trigger for funding closure of the full CAW configuration.

Therefore, EnergySolutions considers both impractical and overly costly the Division's amendment to Condition 43 requiring the "Licensee funds the financial surety for decommissioning of the CAW embankment as designed and approved" before receiving approval to build the liner between CA and CAN. Instead, EnergySolutions suggests that the financial surety funding requirement better represent actual premature closure by an independent contractor if it is conditioned on either 1) placement of waste between the CA and CAN, or 2) receipt of waste volumes exceeding the total waste capacity of the CA and CAN embankments (minus the volumes generated during facility decommissioning).

DRC Response # 1:

The DRC drafted language regarding License Condition 43 to achieve clarity about the timing of providing financial surety for construction of the portion of the Class A West embankment joining the previously approved Class A and Class A North embankments as well as consistency with existing regulatory requirements regarding the adequacy of

the amount of financial surety associated with disposal site closure and stabilization. Specifically, UAC R313-25-31(4) states:

> The amount of the licensee's financial or surety arrangement shall change in accordance with changes in the predicted costs of closure and stabilization. Factors affecting closure and stabilization cost estimates include inflation, increases in the amount of disturbed land, changes in engineering plans, closure and stabilization that have already been accomplished, and other conditions affecting costs. The financial or surety arrangement shall be sufficient at all times to cover the costs of closure and stabilization of the disposal units that are expected to be used before the next license renewal.

Consistent with this rule, the financial surety can incorporate the costs associated with the construction of the clay liner for the Class A West embankment. The clay liner constitutes construction that combines the existing Class A and Class A North embankments and therefore must be considered as a change affecting the financial surety. The existing surety for the separate disposal embankments does not include any closure or stabilization costs associated with the Class A West clay liner. The license amendment as proposed by the DRC results in greater consistency with the need for the financial surety to be "sufficient at all times to cover the costs of closure and stabilization." Requiring the closure and stabilization funding at the time of the construction of the clay liner rather than just prior to waste placement meets the standard under R313-25-31(4).

Additionally, the following history provides context for the proposed action.

In its May 15, 2011 application for the Class A West Amendment, EnergySolutions stated: "Upon DRC approval of the Class A West embankment and associated financial surety calculations, and prior to placing waste in portions of the class west [*sic*] embankment that exceed horizontally or vertically beyond the current approved Class A and Class A North designs, EnergySolutions will amend the letters of credit necessary to ensure funding for closure and post-closure monitoring of the Class A West embankment."[3] The DRC captured this language as part of the public participation process, quoting this statement in the public participation summary.[4] The language incorporated in Amendment 14 to the RML differed from that in the application: L.C. 43 states; "The Licensee shall, in the 2012 Surety submittal, provide cost estimates based on the Class A West design submitted on Drawings 10014 C01 through C065 listed in Table 2C of the GWQDP. The Licensee shall provide surety funding as approved by the Director prior to commencing construction of the clay liner in the area between the previously approved Class [*sic*] and Class A North embankments."[5] Staff wrote License Condition 43 based on the understanding that EnergySolutions would commence liner construction between the previously-approved Class A and Class A North embankments

[3] Class A West Amendment Application, EnergySolutions, May 15, 2011, p. 51.
[4] EnergySolutions' Class A West License Amendment Request, Public Participation Summary, DRC, November 14, 2012.
[5] License Number UT 2300249 Amendment #14.

to join them into the new Class A West embankment during the 2013 construction season. DRC staff also believed that commencement of liner construction would trigger funding of the surety for the construction of the combined embankments.

On November 30, 2012, the DRC received the 2012 annual surety submittal (dated December 1, 2012)[6]. The surety submittal did not contain the construction cost estimate required under License Condition 43.[7] On March 6, 2013, near the commencement of the 2013 construction season, the DRC, in a letter of the same date, requested the omitted cost estimate and the associated funding in surety for the entire Class A West embankment.[8] EnergySolutions responded to the DRC request by declining new funding for anything beyond the annual increment of waste anticipated to be placed on the legacy Class A and Class A North embankments. The response did not address the requested cost estimate.[9]

On July 16, 2013 representatives of EnergySolutions and the DRC met to discuss License Condition 43 and to plan a path forward.[10] During that meeting, EnergySolutions committed to submit the Class A West cost estimate. The DRC committed to review the estimate, and on finding it complete, to accept it as sufficient to meet the requirement of License Condition 43. The DRC agreed to accept increments of funding for the work EnergySolutions anticipated for completing each year, until work commenced to join the legacy embankments. On August 6, 2013, Russ Topham, of the DRC staff, sent an electronic mail message to Vern Rogers of Energy Solutions asking when the DRC would receive the estimate.[11] In a reply on August 7, 2013, Vern Rogers indicated the estimate was forthcoming.[12] On August 29, 2013 the DRC received a summary statement of anticipated costs for constructing the Class A West embankment.[13] The DRC accepted that estimate as satisfying the estimate portion of the requirement in License Condition 43. Negotiations and internal discussions regarding other surety-related concerns proceeded over the next three months. On November 5, 2013, the DRC sent another request for information regarding surety issues, in which the DRC informed EnergySolutions that the submitted estimate met the submittal requirement of License Condition 43.[14]

Benchmarking the approach the DRC has taken in the proposed amendment with what the Texas Commission on Environmental Quality has done with Waste Control Specialists can provide insight into the DRC's proposed action. EnergySolutions suggests such a benchmarking exercise in Comment #2 below. The Texas Commission on

---

[6] Revised 2012 Annual Surety Report submitted February 20, 2014 (DRC-2014-001884).
[7] 2012 LLRW Annual Surety Submittal, Radioactive Materials License UT2300249, EnergySolutions, December 1, 2012 (DRC-2012-002436).
[8] Rusty Lundberg Letter to Sean McCandless, March 6, 2013 (DCR-2013-001955).
[9] Sean McCandless letter to Rusty Lundberg, April 25, 2013 (DRC-2013-002070).
[10] Agenda for meeting on July 16, 2013 at the DRC offices (DRC-2013-003661).
[11] Electronic mail message from Russ Topham to Vern Rogers, August 6, 2013 (DRC-2013-003660).
[12] Electronic mail message from Vern Rogers to Russ Topham, August 7, 2013 (DRC-2013-003659).
[13] Letter from Vern Rogers to Rusty Lundberg, August 8, 2013 (DRC-2013-002904).
[14] Letter from Rusty Lundberg to Sean McCandless, November 5, 2013 (DRC-2013-003662).

Environmental Quality (TCEQ) has regulatory jurisdiction over the Texas Compact low-level waste disposal facility operated by Waste Control Specialists. The TCEQ requires full funding to completely build out all embankments at the time the embankments receive approval. For surety purposes, the TCEQ has defined closure of a disposal unit as "filling any remaining air space in the disposal unit and then placing a cover over the unit."[15] Tonya Baker, former Assistant Division Director and Special Counsel with TCEQ, clarified in personal communication with DRC staff that "filling any remaining air space" means building the embankment to the horizontal and vertical limits approved in the plans, including the use of clean fill in place of waste material.[16] Accordingly, requiring funding at the time EnergySolutions begins construction of the clay liner to join the Class A and Class A North embankment liners affords an appropriate future point to collect the surety funding and meets the intent of R313-25-31(4).

After reviewing the comment and the licensee's proposed language, the DRC has determined to retain the originally proposed text.

EnergySolutions' Comment # 2:

2) CONDITION 73.B:

Division Proposed Amendment:	*302*	*Contingency*	*15 ~~11~~%*
EnergySolutions Proposed Amendment:	*302*	*Contingency*	*11 ~~15 11~~%*

EnergySolutions' Comment: *Included in its request for information of November 5, 2013, the Division incorporates the following requirement,*

> *"In compliance with provision R3I3-22-35(3)(g) of the Utah Administrative Code, the DRC proposes to increase the contingency in stages with the first increment to 15% to take place with the 2013 surety update (due December 1, 2013), and 20% occurring with the annual surety submittal on December 1, 2014. The annual surety submittal due on December 1, 2015 would include a contingency of 25%. "*

In support of their directive to increase the surety calculation's contingency multiplier from 11% to 25% in Condition 73 .B, the Division cites NRC guidance NUREG 1757 [incorporated into rule in Utah Administrative Cove [sic] R313-22-35(3)(g)], noting

> *"it appears that the settlement between ES and the DRC on a contingency multiplier of 11% may have not fully accounted for the above Rule requirement [NRC recommendation ofNUREG-1757]."*

---

[15] Financial Assurance Report: A Report to the 83rd Texas Legislature, Texas Commission on Environmental Quality, November 2012, p. 9. (www.tceq.texas.gov/assets/public/comm-exec/pubs/sfr/109.pdf)
[16] Record of Conversation, October 9, 2013 (DRC-2013-003697).

*However, NUREG-1757 does not apply to the costs of decommissioning of low-level radioactive waste facilities licensed under 10 CFR Part 61 or the equivalent Utah rules. NUREG-1757 explicitly states: "Volume 3 is intended to apply **only** to the decommissioning of materials facilities licensed under Title 10 of the Code of Federal Regulations (10 CFR) Parts 30, 40, 70, and 72" [emphasis added].*

Since Energy-Solutions' facility is licensed under UAC R313-25 (which is the state equivalent to 10 CFR 61), NUREG-1757 is not applicable. Rather, the requirements for funding closure and decommissioning of low-level radioactive waste facilities are found in 10 CFR 61.62 and NUREG-1199.

It is true that UAC R313-22-35(3)(g) requires that "all documents submitted to the Director for the purpose of demonstrating compliance with financial assurance and recordkeeping requirements meet the applicable criteria contained in the Nuclear Regulatory Commission's document NUREG-1757. " However, NUREG-1757 by its own terms is not applicable to licensed low-level radioactive waste facilities.

Under Utah law, the DRC must make a showing that application of NUREG-1757 guidance to the low-level radioactive waste facilities is necessary to protect health and the environment in the State of Utah. Specifically, Utah Code Ann. § 19-3-104(9) provides that the Radiation Control Board may not adopt rules more stringent than corresponding federal regulations for purposes of administering the program delegated by the NRC unless "it makes a written finding after public comment and hearing and based on evidence in the record that corresponding federal regulations are not adequate to protect public health and the environment of the state." Therefore, absent such a finding by the Board, NUREG-1757 guidelines cannot be required by state rule where the corresponding federal provision explicitly provides that the guidelines do not apply.

In sum, the Division has not provided any legal or factual basis for the proposed increase in the contingency multiplier, nor has it demonstrated that the existing multiplier is inadequate. Without a record underlying the Division's determination, the proposed license amendment is not legally or factually supportable.

Additionally, the Division has failed to address differences highlighted herein by EnergySolutions between the Division's interpretation of NRC's recommendation and practical examples of how NRC itself has actually implemented it with other licensees.

1) UMETCO Minerals, Gas Hills Uranium Tailings Site, Fremont and Natrona Counties, Wyoming.

a. Contingency Multiplier = 15%

b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 15%

2) Crow Butte Facility.

a. Contingency Multiplier =15%

b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 25%

3) North Butte Satellite Facility.

a. Contingency Multiplier = 15%
b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 25%

*4) **Three years after the initial publication of NUREG-1757,** NRC imposed significantly lower multipliers than those cited by in the Division's proposed amendment when it directly licensed EnergySolutions' 1 le.(2) Embankment.*
a. Contingency Multiplier =15%
b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 15%

In further support of EnergySolutions' objection to the Division's proposed amendment to Condition 73.B, EnergySolutions also recognizes other significant differences with the Division's definition of "indirect cost multipliers" and that applied to other licensees by the Division, the Utah Department of Environmental Quality (UDEQ), and the State of Texas:

1) Clean Harbors Aragonite Incineration Facility.8
a. Contingency Multiplier = 10%
b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 15%
2) Safety-Kleen Systems, Salt Lake City, Utah.9
a. Contingency Multiplier = 0%
b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 10%
3) Ashland distribution, Freeport Center, Clearfield Utah.10
a. Contingency Multiplier =15%
b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 15%
4) ATK Launch Systems, NIROP Facility.
a. Contingency Multiplier = 10%
b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 35%
5) Energy Fuels Resources (USA) Inc, White Mesa Uranium Mill2
a. Contingency Multiplier =15%
b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 15%
6) Waste Control Specialists
a. Contingency Multiplier = 10%
b. Sum of all Indirect Cost Multipliers (including Contingency Multiplier) = 46.7%

As the Division is aware, Condition 73 .B requires calculation of indirect costs to "be based on the sum of all direct costs in accordance with the following values," which will total 64.75% (following the increase in Contingency Factor to 25%). Even though the Division has subsequently "disagreed with the notion of viewing the indirect multipliers in LC73 in the aggregate," the list of multipliers required by Condition 73.B were, in fact, negotiated in aggregate through a year-long comprehensive exercise involving multiple independent assessments and extensive discussions between the Division and EnergySolutions.

As was concluded in the November 8, 2005 Division Memo,

> *"DRC has reviewed [EnergySolutions'] subject letter dated October 24, 2005 and also [EnergySolutions'] memo dated November 7, 2005, regarding third Party Surety initiative, and we agree with the negotiated percentages shown for each of the indirect costs, which total 49.75 percent".*

The Division's proposed amendment increases the indirect multipliers contrary with NRC's own implementation for EnergySolutions and other licenses. Furthermore, the basis for Division's proposed amendment is an application of NRC guidance conflicting from its own stated purpose. Finally, the Division's proposed amendment arbitrarily increases EnergySolutions' indirect multipliers in a manner inconsistent with those imposed on other UDEQ licensees and permittees, including a direct competitor located in the State of Utah. As such, the implementation of this unsupported significant increase in Condition 73.B places EnergySolutions under a far more stringent condition than those currently imposed by NRC. Any effort to revisit a single component of the indirect multipliers must apply appropriate NRC guidance and also be consistent with its application by NRC, UDEQ, and state regulatory agencies to EnergySolutions' competitors and to other licensees and permittees.

DRC Response # 2:

As the following discussion demonstrates, the NRC regulation and guidance for waste repositories provided a philosophy and nothing more. The framework and the regulatory effort were left to the State to address.[17] This is particularly relevant because the four existing commercial low-level radioactive waste disposal facilities in the U.S. are licensed by the respective host Agreement State and not the NRC. Additionally, the EnergySolutions Clive facility is unique from the other three commercial disposal facilities as it is the only site where the state, as the licensing authority, does not own the land. The Clive facility is both privately owned and operated by EnergySolutions as the licensee.

The discussion which follows serves to describe how the Radiation Control Board and the DRC have attempted to provide a uniform framework for all holders of a specific license in order to minimize the potential for burdening one licensee disproportionately in comparison to another.

---

[17] An example illustrative of the NRC leaving to the State resolution of open issues appears in NUREG-0945, the Final Environmental Impact Statement on 10 CFR Part 61 (1981). On p. S-24 of Volume 1, the author discusses public comment on Part 61. The comments center on omissions in the Regulation. The author responds that these matters "are a matter to be worked out between the site owner (i.e., the state or federal government) and the licensee...." Although not addressing the issues in this Public Participation Summary, this example demonstrates that the NRC has expected the State to identify and fill omissions in the Regulations. NUREG-1200, p. 10.2-9 includes the following: "No regulatory guides apply to the review of an applicant's financial assurance mechanisms." In the case confronted in this Public Participation Summary, the omission was a method to determine the amount of financial assurance to require of the licensee and a set of criteria to include in the financial instruments used to secure the financial assurance.

In conjunction with other relevant portions of 10 CFR, the DRC evaluated the regulatory framework provided in 10 CFR 61. This review revealed that the framework the NRC had proposed for some segments of the radiologic and nuclear community provided robust protection, while other sectors were left overly general or broad. For example, the federal regulations lack the specificity in calculating and determining the required cost estimates for closure and post-closure of a low-level waste disposal site. NRC requirements addressing surety for waste disposal facilities appear in 10 CFR 61.62.[18] The language in 10 CFR 61.62 provides a requirement to establish a surety, but provides no detail.

The other document addressing waste disposal is NUREG-1199. This guidance provides assistance in determining acceptable surety instruments, but is silent on a methodology for determining the dollar amount of the surety. NUREG-1199 refers the reader to a document titled *Funding Assurances for Closure, Postclosure, and Long-Term Care of a Low-Level Waste Disposal Facility.*[19] That document is not available on the NRC website, and when asked on February 26, 2014, a specialist in the NRC document repository was unable to locate a copy of the document.

NUREG-1199 was published in January, 1991. The DRC could not find data on surety practices for low-level waste activities for that time period. However, the history of surety performance in the area of uranium mills and mill tailings sites provides the closest analogue to low-level waste disposal available to the DRC. Shortly after publication of NUREG-1199 the NRC scaled back its efforts to amend the low-level waste regulatory framework and guidance "because the NRC had a regulatory framework in place sufficient to review a 10 CFR Part 61 license application[33] and the Commission had relinquished its licensing authorities to those host states with a lead role in developing new commercial LLW disposal facilities."[20] No new surety guidance has emerged from the NRC since publication of NUREG-1199 for low-level waste. This leaves the State with the responsibility to supplement the generic comments made in NUREG-1199 and 10 CFR 61.62 with what it determines will provide adequate financial protection to the taxpayer in the event of licensee failure and financial default.

The low-level radioactive waste industry history contains too little data to gauge the effectiveness of the NRC surety policy in NUREG-1199 and 10 CFR 61.62. The closest comparisons come from experience under the Uranium Mill Tailings Remedial Action program (UMTRA). An examination of the Moab, Utah UMTRA site closure effort reveals a surety budget of $6.5 million and an expected expenditure of $924 million (current dollars).[21] The surety policy and practice of the NRC resulted in a surety two orders of magnitude too low to close the site. The mill suspended production in 1984, and underwent decommissioning activities between 1988 and 1998, when the owner, Atlas

[18] http://www.nrc.gov/reading-rm/doc-collections/cfr/part061/part061-0062.html
[19] NUREG-1199, p. 10-2.
[20] NUREG-1853 p. 29
[21] Electronic mail from Don Metzler to Russ Topham, February 26, 2014.

Corporation, declared bankruptcy.[22] The 1998 bankruptcy occurred seven years after publication of NUREG-1199. Experiences like this led to reworking the NRC regulatory framework and guidance library for uranium mills, including the production of NUREG-1727 and, later, NUREG-1757.

If NRC used the same policies and procedures as a foundation for low-level waste regulation and guidance as it used for uranium mill sites, the results for low-level waste sureties could mirror those for uranium mills. The documents EnergySolutions asks that the DRC consult with respect to the surety date from that era, and, as discussed above, provide too little detail to guide the calculation of a complete surety.

To reduce discretion to provide direction lacking in 10 CFR 61.62, along with providing consistency in regulating compliance with financial assurance requirements and to reasonably safeguard against an insufficient surety, the DRC evaluated a number of options, ultimately determining the need to provide a uniform approach to all holders of specific licenses. Contrary to one of the arguments EnergySolutions puts forward in the comment above, namely, that NUREG-1727 only applies to an 11e.(2) byproduct material disposal site, and does not apply to a low-level waste disposal site, R313-22-35(3)(e) clearly requires all licensees who desire to possess and use radioactive materials comply with applicable NUREG-1727 financial assurance requirements. These regulatory objectives were achieved by the Radiation Control Board incorporating NUREG-1727 into rule at R313-22-35(3)(e). The Radiation Control Board considered this rule change at its meeting on October 3, 2003.[23] The DRC sought public comment for the period from November 1 through December 1, 2003.[24] The DRC received no comments from the public or the regulated community during the public comment period. Consequently, the Radiation Control Board adopted the rule changes and set an effective date of December 12, 2003.

The rule as originally adopted read as follows: "Applicants for a specific license authorizing the possession and use of radioactive materials in sufficient quantities that require financial assurance and recordkeeping for decommissioning under Section R313-22-35 shall assure that all documents submitted to the Executive Secretary for the purpose of demonstrating compliance with financial assurance and recordkeeping requirements meet the applicable criteria contained in the Nuclear Regulatory Commission's document NUREG-1727, 'NMSS Decommissioning Standard Review Plan' (9/2000)."[25] This language makes clear that, notwithstanding the original intent of the guidance, the Radiation Control Board intended holders of a specific license to comply with this requirement if the licensee had to provide financial assurance. This action addressed the need for uniformity over the regulated community (which

---

[22] Evaluating the Lifecycle Costs of Yellowcake Production at, and Remediation of the Moab, Utah, Site Donald R. Metzler, September 21, 2011, pp. 1-2.
[23] Radiation Control Board Agenda, October 3, 2003. (DRC-2003-001021)
[24] Receipt from Newspaper Agency Corporation and attached documents, November 1, 2003. (DRC-2003-001022)
[25] R313-22-35(3)(e), as adopted December 12, 2003.

uniformity EnergySolutions seeks in its comment) and the need for coverage where the federal regulatory framework lacked specificity or sufficiently robust language. The DRC demonstrated a legitimate need, and followed prescribed legal processes in the initial implementation of the rule.

Following the 2003 Radiation Control Board's adoption of NUREG-1727 in R313-22, the NRC updated a number of its documents and regulations. Relevant to this case, the NRC updated and revised NUREG-1727. [26] The Radiation Control Board initiated a rulemaking process to amend R313-22 to update the reference to the new NRC guidance document.[27] Representatives of EnergySolutions attended the board meeting at which the Board approved the proposed Rule change and directed the DRC staff to take the proposed Rule change to public comment.[28] This proposed rule change appeared in the September 1, 2006 edition of the *Utah State Bulletin* under Request #28922. In addition to the public notice in the newspaper[29], the DRC sent a mailer to those affected by the rulemaking action, including a company official of EnergySolutions.[30] No comments were received, and the Board adopted the proposed rule changes at its October 6, 2006 meeting.[31]

As described above, the adoption of NUREG-1757 in R313-22-35(g)(3) is not more stringent than corresponding federal rules. Federal rules provide insufficient guidance about how financial assurance requirements will be met, leaving regulatory decision makers with wide discretion within a broad range of appropriate actions they can take. Adoption of NUREG-1757 provides an interpretation that is within that broad discretion, providing more precise guidance for regulated entities and regulators about how that discretion will be exercised. There is no requirement in NUREG-1757 that would not be within the acceptable range of the Director's discretion had NUREG-1757 not been adopted and the imprecise requirements of the rule as it was before still stood.

EnergySolutions' reliance on the stringency provision in Utah Code Ann. § 19-3-104(8) is misplaced. The federal regulation governing surety for low-level waste facilities is 10 CFR § 61.62. It provides only broad guidance with respect to the appropriate amount of the surety:

> (a) The applicant shall provide assurance that sufficient funds will be available to carry out disposal site closure and stabilization, including: (1) Decontamination or dismantlement of land disposal facility structures; and (2) closure and stabilization of the disposal

[26] NUREG-1757, Volume 3, p. iii.
[27] Notice of Proposed Rule Amendment filed August 14, 2006. (DRC-2006-001041)
[28] Minutes of the Utah Radiation Control Board, August 4, 2006. (DRC-2006-001044)
[29] Letter from Dane L. Finerfrock to Lynn Valdez [Newspaper Agency Corporation], August 30, 2006. (DRC-2006-001046)
[30] Letter from Dane Finerfrock, August 30, 2006, including distribution list. (DRC-2006-001042)
[31] Radiation Control Board, Final Agenda, October 6, 2006 (including Rulemaking Board Action Item summary). (DRC-2006-001045)

> site so that following transfer of the disposal site to the site owner, the need for ongoing active maintenance is eliminated to the extent practicable and only minor custodial care, surveillance, and monitoring are required. These assurances shall be based on Commission-approved cost estimates reflecting the Commission-approved plan for disposal site closure and stabilization. The applicant's cost estimates must take into account total capital costs that would be incurred if an independent contractor were hired to perform the closure and stabilization work.
>
> . . .
>
> (d) The amount of surety liability should change in accordance with the predicted cost of future closure and stabilization. Factors affecting closure and stabilization cost estimates include: inflation; increases in the amount of disturbed land; changes in engineering plans; closure and stabilization that has already been accomplished and any other conditions affecting costs. This will yield a surety that is at least sufficient at all times to cover the costs of closure

Federal regulators are free to interpret that provision, using orders, anywhere within the broad range of discretion that provision grants.

For a number of reasons, the Radiation Control Board decided not to leave questions of interpretation to the Director's discretion. Instead, it limited that discretion by requiring the use of NUREG-1757. This limitation is not more stringent than federal regulations. The requirements of the NUREG are within the range of actions that could be required of a licensee under the broad discretion granted in 10 CFR § 61.62.

The DRC also notes that a person alleging that a rule is outside of the agency's authority must first submit comments during the public comment period and must then bring a complaint within six months of the rule's effective date. For a rule that is older than six months, they must first submit a request for rulemaking. See Utah Code Ann. § 63G-3-602(2) and (3). ES neither submitted comments during the public comment period for R313-22-35(3)(g) nor filed a request for rulemaking. These requirements are important. They allow the policy-maker, in this instance the Radiation Control Board, to consider the concern, consider their reasons for proposing or making the rule in the first instance and then make the appropriate policy decision, as it has been statutorily charged to do. The Board may decide to change a rule to be in conformance with a federal rule, or may decide to meet demonstrated health and safety concerns by changing the rule in conformance with the procedures in Utah Code Ann. § 19-3-104(9)(a). The Radiation Control Board may also disagree with the commenter, and make a determination that a rule is not more stringent than the corresponding federal regulation, a determination that could be challenged under the Utah Administrative Rulemaking Act. These are the only procedures for addressing questions in existing rules about stringency; the agency does not have the authority to ignore promulgated rules.

EnergySolutions cites a number of instances where it claims other regulated entities receive different treatment with respect to the contingency line item than the DRC has proposed. To address this, a consideration of industry standard provides a good starting point. NUREG-1727 required a contingency of 25 percent of all costs.[32] That recommendation carried through to NUREG-1757.[33] NUREG-1757 further discusses the basis for the 25% contingency as "reasonable assurance for *unforeseen* circumstances that could increase decommissioning costs, and should not be reduced or eliminated simply because foreseeable costs are low [emphasis in the original]." Then NUREG-1757 refers to "analysis and guidance contained in NUREG/CR-6477, which applies a 25 percent contingency factor to all estimated costs associated with decommissioning various reference facilities."[34] Additionally for comparative purposes, NRC guidance for mill tailings sites, states: "The staff currently considers a 15 percent contingency to be an acceptable minimum amount."[35]

RSMeans cites a range of contingency values for different degrees of project development, with the contingency set at 25 percent for concept plans, 20 percent for schematic plans, 15 percent for design development drawings, and 8 percent for final working drawings (bid-ready plan sets).[36] With the contours evolving on a daily basis at the site, the state of plan development is necessarily general. Thus, the recommended contingency would tend to reflect a lower level of plan development, 20 to 25 percent.

NUREG-1757 introduces the idea of setting aside funding for corrective actions, and identifies the contingency line item as the appropriate place to capture those that cannot be predicted.[37] This rationale takes on additional importance when dealing with the potential for environmental releases.

The Department of Energy has provided important insights into cost estimating that bear on this discussion. "When estimating the cost of a project or program, the estimator needs to know more than a quantity and a price for that quantity to develop an all-inclusive (or good) estimate. When developing an estimate, the estimator is producing a cost estimation package. This package consists of the estimate, the technical scope, and the schedule, all of which should be cross referenced to ensure that they are consistent. This package establishes a baseline document for the project or program at its onset."[38] The cost estimates the DRC reviews contain a high degree of precision, but that precision reflects a number of assumptions about the contours of the project. Those contours change daily. The accuracy of the estimate is not what it could be if the facility were no longer operating. With the ambiguity inherent in forecasting what the estimate should

---

[32] NUREG-1727, p. 15.7.
[33] NUREG-1757, Volume 3, Rev. 1, p. 4-10.
[34] NUREG-1757, Volume 3, Rev. 1, p. A-29
[35] NUREG-1620, p. C-4.
[36] Facilities Construction Cost Data, RSMeans, 2008, p. 9.
[37] NUREG-1757, Volume 3, Rev. 1, p. A-191.
[38] Cost Estimating Guide, Chapter 2, p. 201, DOE G 430.1-1, www.directives.doe.gov/directives/0430.1-EGuide-1-Chp02/view.

cover, and in the absence of a stable plan set and well-developed project schedule, the estimate should be treated as reflecting a concept plan, regardless of the precision used to generate the estimate.

ASTM International has generated standards for the construction industry. ASTM E2168 defines the terms *contingency* and *allowance*. ASTM E2168 Section 5.2.1 defines *allowance* as "A sum of money that is intended to be spent on the planned scope of work. Used in the absence of precise knowledge, and estimated, to the best of one's abilities, to ensure a full and complete estimate. Allowances cover events and activities that are normally internal and so are directly controllable within the project plan." Examples include mobilization, profit, environmental remediation, and regulatory oversight. Section 5.2.2 defines *contingency* as "A sum of money that is provided to cover the occurrence of unintended departures from the planned scope of work. Used in the absence of precise knowledge, and estimated, to the best of one's knowledge, to ensure that a financial buffer is available within a budget. Contingencies assist in mitigating the effects of unplanned events and other risks that are external to, and are not directly controllable within, a project plan." The only line item in the current surety that meets this definition of contingency is the contingency line item. Although not explicitly cited in the referenced documents, all NRC documents referenced in this Public Participation Summary follow this convention in usage of the term *contingency.*

ASTM E1946 presents a range of contingency values for varying degrees of plan development. This standard recommends from 7 percent contingency for plans of the highest order of comprehensiveness (bid ready) to 25 to 35 percent for concept plans.

EnergySolutions cited NRC treatment of four facilities as precedent for the DRC to consider when evaluating the contingency line item. Those include UMETCO Minerals, Gas Hills Uranium Tailings Site, Fremont and Natrona Counties, Wyoming; Crow Butte Facility; North Butte Satellite Facility; and, EnergySolutions' 11e.(2) Embankment prior to DRC involvement. These facilities except for ES 11e.(2) are outside Utah's jurisdiction and no documentation was provided to support the contingency multiplier. The DRC should model its approach after industry standard, informed by experience, rather than accepting exceptions to the cited standards as the norm. The DRC does not accept these examples as industry standards, especially when there is limited information provided in support of the cited examples.

EnergySolutions cited state treatment of four facilities not involved in the DRC program as benchmark cases. These include Clean Harbors Aragonite Incineration Facility; Safety-Kleen Systems, Salt Lake City, Utah; Ashland distribution, Freeport Center, Clearfield Utah; and, ATK Launch Systems, NIROP Facility. These facilities are not sufficient comparisons for low-level waste disposal, because they are governed under a different set of Federal Regulations (i.e. 40 CFR versus 10 CFR). The commenter provided no documentation and details on how the contingency values were established.

EnergySolutions cited the DRC treatment of Energy Fuels Resources (USA) Inc., White Mesa Uranium Mill. The information EnergySolutions cited is out of date. The contingency line item is 20% in the 2013 surety, and is scheduled to go to 25% in the 2014 surety, and other multipliers are being revisited.[39]

EnergySolutions cited the example of the surety for Waste Control Specialists (WCS) as approved by the Texas Commission on Environmental Quality. In addition to the 10 percent contingency cited, the TCEQ required a corrective action line item based on modeling of hypothetical releases following a theoretical liner breach. That allowance was set at $25.9 million on a closure budget of $81.6 million, or 31.7% of direct costs.[40] EnergySolutions has no such requirement.

On November 8, 2005, following a period of negotiation, the DRC and EnergySolutions' predecessor, Envirocare of Utah, reached agreement on a basic framework for the low-level and 11e.(2) surety cost estimates.[41] It is unclear why this agreement does not reflect the requirement of R313-22-35(3)(g) to use NUREG-1757, Volume 3, as the basis for the surety documents. The referenced agreement addresses budgetary allowances, or line items for known needs, and that the project manager would expect to spend in order to complete a successful project. Examples include mobilization and demobilization, DEQ oversight of the project, management and legal expenses, and engineering support, among others. In the 2005 agreement, these total 38.75% of direct costs. By comparison, the environmental remediation line item that TCEQ requires of WCS calculates to 31.7% of direct costs, and is an example of an allowance that the DRC has yet to require of EnergySolutions. The 2005 agreement details a contingency allowance for unforeseen and unforeseeable conditions or events set at 11% of direct costs.

Each of these allowances constitutes a discrete budget activity within the total project budget, and should receive scrutiny on its own merits. Upon identifying unaddressed needs in one of these overhead multipliers or the need to add a new item to the budget, the surety reviewer needs the flexibility to ask for adjustment of that multiplier without the necessity of decreasing another budgetary allowance to compensate. For example, increasing the contingency allowance from 11% to 25% to meet the requirement of the rule and to align with industry standards should not require reduction in the remaining line items to keep the total of indirect cost multipliers constant. Keeping the total of the indirect cost multipliers constant could result in totally eliminating required funding for engineering support, management activities, and regulatory oversight.

EnergySolutions cites the sum of the indirect multipliers as excessive. Research in the construction industry does not support this opinion. For example, one researcher states, "When indirect costs are compiled as described [earlier in this report], they represent a

---

[39] Letter from Rusty Lundberg to Jo Ann Tischler, October 17, 2013. (DRC-2013-003668)
[40] Financial Assurance Report: A Report to the 83rd Texas Legislature, Texas Commission on Environmental Quality, November 2012, p. 8. (www.tceq.texas.gov/assets/public/comm-exec/pubs/sfr/109.pdf)
[41] Letter from Dane L. Finerfrock to Tye Rogers, November 8, 2005. (DRC-2005-001021)

sizeable amount of the total bid – typically on the order of 70% of the direct costs when profit is included."[42] In all fairness, the cited paper deals with the tunneling industry, but the analysis also limited itself to bid-ready plan sets and the bids generated therefrom. Data on the nuclear industry is not plentiful, and this type of analysis was not encountered in a recent DRC literature search.

EnergySolutions cites negotiations concluded in 2005 over the individual and total indirect cost multipliers. Every year, EnergySolutions refines its approach to the surety and asks the DRC for adjustments. The DRC has chosen to revisit the assumptions used and the conclusions reached in previous talks. The DRC found the information presented in the preceding analysis compelling enough to revisit these issues, and has asked EnergySolutions for adjustments.

The preceding analysis demonstrates that the changes the DRC has incorporated results in bringing the surety requirements into compliance with UAC R313-22-35(3)(g) and closer in alignment to industry standards. These changes are consistent with the DRC's approach with other licensees. The process is ongoing, but the DRC has attempted to set a common direction, which, when the process concludes, will see all holders of Specific Licenses that require financial assurance and recordkeeping for decommissioning under Section R313-22-35 held to the same standards.

Therefore, the Director concludes the contingency shall be set as proposed at 15% as a step toward an eventual contingency of 25% in License Condition 73. B.

EnergySolutions' Comment # 3:

3) CONDITION 73.C:

As currently Licensed: *RS Means Guide estimates of direct construction costs provided in the annual report shall be derived from or based on the most recent edition of the RS Means Guide for Heavy Construction.*

EnergySolutions' Proposed Amendment: *Individual direct unit costs shall be based on either: (a) site-specific bids or data from within the previous 5 years; or (b) the most recent annual hardcopy RS Means Guide for Heavy Construction. If RS Means estimates of direct construction costs are used, they shall be adjusted in accordance with RS Means methods using the nearest applicable City Cost Index.* ~~*RS Means Guide estimates of direct construction costs provided in the annual report shall be derived from or based on the most recent edition of the RS Means Guide for Heavy Construction.*~~

EnergySolutions Comment: *In an effort to balance protection of taxpayers from having to unfairly shoulder the financial burden for premature closure of defunct licensed*

[42] Overhead and Uncertainty in Cost Estimates: A guide to Their Review, John M. Stolz, P.E., p. 5. http://www.jacobssf.com/images/uploads/10_Stoltz_Uncertainty-in-Cost-Estimates_NAT.pdf.

facilities and the unbearable monetary condition created by setting arbitrarily high surety burdens for licensees, NRC very specifically instructs licensees that their surety calculations should include,

> *"a detailed site-specific [emphasis added] cost estimate for decommissioning, based on the costs of an independent contractor to meet the criteria for unrestricted use in 10 CFR 20.1402."*

This guidance is also reflected in Regulatory Guide 1.202, wherein NRC notes it is important that the financial instrument be "site-specific"

It is a common NRC-accepted industry practice employed by independent contractors to develop site-specific cost estimates through the application of RS Means' City Cost Index adjustments to generic National Average unit costs. Examples of NRC's concurrence with the use of this practice are seen in approved surety estimates provided by:

1) *Rio Tinto - Sweetwater.*
2) *Maine Yankee Independent Spent Fuel Storage Facility.*
3) *Yankee Rowe Independent Spent Fuel Storage Facility.*

While not a specific revision as part of the proposed amendment 16 to the License, the Division informed EnergySolutions that it would not be allowed to consider site specific costs developed through the application of published City Cost Indexes to national average unit rates from RS Means. The Division directed that EnergySolutions:

"'adjust the surety... using the RS Means 2013 National Average."

As justification for this directive, the Division stated,

> *"The following request is designed to meet the intent of the rule, to bring current practice in line with **industry standard**.... **and to avoid the necessity of public hearings** and Board action to effect a variance to Rule" [**emphasis added**]*

However, in the referenced directive, the Division is arbitrarily treating EnergySolutions more stringently than a competing facility that they also regulate. Division staff reports that the Energy Fuels Resources (USA) White Mesa Uranium Mill is permitted to use local economic data to derive a site-specific cost estimate, rather than using the R.S. Means national average.

Thus, there are four lines of evidence in support of applying the City Cost Index adjustment:

1) *there is no supporting regulatory requirement for only using generic National Average unit costs,*

2) *the use of site-specific City Cost Index adjustments is a practice commonly allowed by NRC for their licensees,*
3) *the common industrial use of City Cost Index-adjusted RS Means generic national average costs more closely mirrors third party services being utilized by EnergySolutions for current cover and liner construction projects,*
4) *the Division permits a competing facility to apply similar local cost adjustments to the RS Means national average*

Nonetheless, the Division cited its "preference to use the RS Means National Average rather than the Salt Lake City index" in denying EnergySolutions petition for their use to satisfy requirements for the generation of site-specific cost estimates. This "preference" is not supported by law, regulation, or demonstrated practical necessity.

In fact, in the highly unlikely event that the Division were forced to oversee the premature closure of EnergySolutions' CAW Embankment, it is obvious that the Division would require qualified third-party contractors to provide "site-specific" cost estimates for necessary services. As such, it is unreasonable to assume the Division would seek to secure services from contractors who only provided bids based on generic estimates and nonspecific multipliers (as high as 64.75%) of average unit costs. Successful completion of these construction activities illustrates that the Division's proposed amendment of increasing the cumulative indirect multipliers up to 64.75%, in fact, ***do not*** *"bring current practice in line with industry standard."*

The Division denies EnergySolutions' application of City Cost Indexes contrary with DRC's implementation for other licenses. Furthermore, no basis is provided by the Division for its denial and is given in a manner inconsistent with those imposed on other UDEQ licensees and permittees, including a direct competitor located in the State of Utah. As such, the denial places EnergySolutions under a far more stringent condition than those currently practiced by NRC. Therefore, EnergySolutions proposes amendment to Condition 73.C.

DRC Response # 3:

EnergySolutions requests the DRC use the City Cost Index for Salt Lake City within RSMeans to establish unit costs for labor. As discussed in the following paragraphs, the DRC has required the use of the national average cost tables within RSMeans because the remote location of Clive from Salt Lake City gives rise to concerns that performing the work at Clive may require more compensation for labor than for the same services in Salt Lake City. The same reasoning holds for procurement of equipment and supplies. The DRC remains open to using the City Cost Index if EnergySolutions presents data demonstrating adequately that the costs are equivalent in the two locations.

As described in this response, DRC has the authority without EnergySolutions' suggested license amendment to take the approach EnergySolutions proposes if that approach is

justified. At this time, no information has been presented to justify the approach, and it is inappropriate to adopt that approach without justification.

EnergySolutions cites the language in 10 CFR 20.1402 that licensees should build surety cost estimates on "a detailed site-specific cost estimate" for decommissioning, based on the costs of an independent contractor to meet the criteria for unrestricted release.[43] EnergySolutions has presented this argument repeatedly over a number of surety review cycles, both with the Low Level surety and the 11e.(2) surety, most recently with the 2013 11e.(2) surety submittal.

In Comment #2 above, EnergySolutions cited negotiations in 2005 between the DRC and Envirocare of Utah (now EnergySolutions) regarding individual cost estimate adjustments. Those negotiations established as the standard for setting unit prices in the surety estimate the national average as contained in the RSMeans Facilities Construction Cost Index.[44] This is the same standard the Utah Division of Solid and Hazardous Waste requires in surety estimates for RCRA sites. EnergySolutions is seeking to deviate from that agreement in favor of the City Cost Index for Salt Lake City within RSMeans. The DRC opposed implementing the city cost index on the grounds that Clive was too remote from Salt Lake City for the City Cost Index to apply.[45] Labor costs, for example, are likely to be more than in Salt Lake City because there is no local labor pool and Wasatch Front workers may be unwilling to spend the unreimbursed travel time to come to the Clive site.

The RSMeans data set includes data for over 700 metropolitan areas. The City Cost Index was designed to provide comparison between cities and regions, and that "a City Cost Index is a percentage ratio of a specific city's cost to the national average cost of the same item at a stated time period."[46] The data set includes values for Salt Lake City, but not for Clive. To use Salt Lake City values for Clive would require a demonstration that the costs at the two locations are equivalent. EnergySolutions has yet to provide the supporting data the DRC needs to make an informed decision that the costs in the Salt Lake City metropolitan area equate to those 80 miles west, in a remote desert location. The methodology spelled out in the RSMeans literature provides a means of comparing two locations for which a City Cost Index exists, and a comparison between a location where a City Cost Index exists and the national average.[47] No method is presented to do as EnergySolutions proposes.

In its 2013 11e.(2) surety submittal, EnergySolutions again proposed implementing the Salt Lake City cost index for the estimate at the Clive facility. The DRC has consistently maintained that if EnergySolutions could demonstrate equivalence between the unit prices for Clive and Salt Lake City, the DRC would consider the data presented and make

[43] 10 CFR 20.1402.
[44] Letter from Dane L. Finerfrock to Tye Rogers, November 8, 2005. (DRC-2005-001021)
[45] Memorandum from Johnathan Cook to Loren Morton, July 20, 2007. (DRC-2007-001361)
[46] Facilities Construction Cost Data, RSMeans, 2008, p. 1248.
[47] Facilities Construction Cost Data, RSMeans, 2008, p. 1248-1249.

a determination based thereon. EnergySolutions has not provided such data, but has attempted to adjust the Salt Lake City values through the use of a "mobilization factor" that has not been documented. Since no city cost index exists for Clive, and the translation of Salt Lake City values to Clive has not been demonstrated, the DRC has maintained the same posture it had in 2005, that the national average must be used.[48] In its comment, EnergySolutions has repeated its argument that "the common industrial use of City Cost Index-adjusted RSMeans generic national average costs more closely mirrors third party services being utilized by EnergySolutions for current cover and liner construction projects." The DRC remains open to considering the data behind this assertion once it has been submitted for review. Until then, absent a means of identifying "site-specific" costs, the DRC must rely on a conservative approximation. RSMeans National Average provides just such an opportunity.

EnergySolutions cites unequal treatment in the case of the Energy Fuels Resources White Mesa Mill, in Blanding. That mill is six miles outside of Blanding, where local data has been acquired that reflects the local economy. The DRC required three data sources to be considered, and the highest of the three to be used.[49] Again, the distances between the facilities and the city or town closest to each are drastically different. The DRC remains open to considering data that can establish a correlation between the Salt Lake City index in RSMeans and Clive.

EnergySolutions cites NRC treatment of three sites: Rio Tinto – Sweetwater, near Rawlins, Wyoming; Maine Yankee Independent Spent Fuel Storage Facility, near Bath, Maine; and, Yankee Rowe Independent Spent Fuel Storage Facility, near Greenfield, Massachusetts. The Sweetwater facility is 40 miles from Rawlins, Wyoming. The Rawlins Census Collection District had a population of 11,065 in 2010,[50] and is heavily dependent on construction and mining for its economy. The DRC has no information that might indicate whether these or other factors entered into the NRC's decision to use the city cost index from Rawlins. The Maine Yankee facility is eight miles from Bath, Maine. Bath had a population of 8,514 in 2010.[51] Yankee Rowe is 29 miles from Greenfield, Massachusetts, which had a 2010 population of 17,465.[52] Clive, Utah is 79 miles from the Salt Lake City Census Collection District, 2010 population of 932,320.[53] EnergySolutions has not shown how these situations compare. The potential for the DRC to contract with a third party that requires a commute of 90 minutes, one way, in order to work at a location that does not have the same level of available services that would exist in a major metropolitan area bears further investigation in order to evaluate the merits of using a City Cost Index.

---

[48] Letter from Rusty Lundberg to Sean McCandless, November 6, 2013. (DRC-2013-003894)
[49] Memorandum from Russell J. Topham, P.E. to Phil Goble, August 30, 2012. (DRC-2012-001943)
[50] Census.gov/popfinder.
[51] IBID.
[52] IBID.
[53] IBID.

Please see Response to Comment #2 to the extent EnergySolutions is claiming a violation of Utah Code Ann. § 19-3-104(9)(a).

After reviewing the comment and the licensee's proposed language, the DRC has determined there is no reason to change the language in Condition 73.C.

EnergySolutions' Comment # 4:

4) CONDITION 73.B (#301):

As currently Licensed:

B. Indirect Costs shall be based on the sum of all direct costs in accordance with the following values:

Surety Reference No.	*Description*	*Percentage*
300	*Working Conditions*	*5.5%*
301	*Mobilization/ Demobilization*	*4.0%*
302	*Contingency*	*11.0%*
303	*Engineering and Redesign*	*2.25%*
304	*Overhead and Profit*	*19.0%*
305	*Management Fee and Legal Expenses*	*4.0%*
306	*DEQ Oversight*	*4.0%*

EnergySolutions' Proposed Amendment:

B. With the exception of Surety ID No. 301, Indirect Costs shall be based on the sum of all direct costs in accordance with the following values:

Surety Reference No.	*Description*	*Percentage*
300	*Working Conditions*	*5.5%*
*301**	*Mobilization/ Demobilization*	*4.0%*
302	*Contingency*	*11~~15~~.0%*
303	*Engineering and Redesign*	*2.25%*
304	*Overhead and Profit*	*19.0%*
305	*Management Fee and Legal Expenses*	*4.0%*

306	*DEQ Oversight*	*4.0%*

**The mobilization factor is applied only to unit costs for moving equipment from one location to another under RS Means.*

EnergySolutions' Comment: *As part of its denial of EnergySolutions' request to apply RS Means City Cost indices to provide site-specific premature closure cost estimates, the Division also stated,*

> *"The mobilization factor is intended to be used only for moving equipment from one location to another under RS Means, and cannot be used for 'adjusting' other unit costs in surety to Clive."*

EnergySolutions concurs with the Division's clarification of how industry commonly applies the mobilization factor. However, this common method of application is not accurately reflected in Condition 73.B(#301). Therefore, EnergySolutions proposes amendment to Conditions 73.B(#301).

DRC Response # 4:
This comment addresses two issues: the applicability of the City Cost Index for Salt Lake City, Utah to Clive, Utah, and the method of treating mobilization on the estimate.

EnergySolutions has proposed using the City Cost Index for Salt Lake City to estimate costs for Clive, 80 miles to the west. This issue received treatment on its own merits in the response to EnergySolutions' Comment #3. In summary, EnergySolutions has been provided opportunity to demonstrate that the costs for providing services in Salt Lake City mirror the costs for those same services in Clive. Until the DRC sees that information, the DRC has no basis on which to accept the method as valid for this application.

What follows describes the mobilization issue and efforts EnergySolutions has made to limit what can be considered in the mobilization line item, and to apply City Cost Index methodologies to mobilization.

Civil works projects involve two types of mobilization. General mobilization and demobilization "are always estimated and scheduled separately" and include such items as "maintenance shops; warehouse areas; worker changing and shower facilities; fuel, oil, and grease areas; power drops, electrical substations, and power distribution systems; compressed air and distribution systems; and water supply and distribution systems."[54] The general mobilization line item also includes preparation of the EPA-mandated storm water pollution prevention plan.[55] Specific Mobilization pertains to moving equipment or delivery of parts to the jobsite. RSMeans includes a method of estimating mobilization in

[54] Overhead and Uncertainty in Cost Estimates: A guide to Their Review, John M. Stolz, P.E., p. 2. http://www.jacobssf.com/images/uploads/10_Stoltz_Uncertainty-in-Cost-Estimates_NAT.pdf.
[55] Ibid., p. 2

such cases, which can be factored into the equipment unit price, shown as a separate line item with each applicable piece of equipment, or summed and shown as a separate line item.[56]

In general practice, both General Mobilization and Specific Mobilization are summed to form a single Mobilization line item in the cost estimate, or all mobilization is factored into other elements of the contract price. To aid in evaluating the reasonableness of surety estimates, the DRC prefers to see the mobilization charge separately accounted for in some fashion. In the case of EnergySolutions, the 2005 agreement between the DRC and the company spelled out a 4 percent mobilization rate to be applied to the sum of all direct costs.

EnergySolutions cited a DRC comment that "The mobilization factor is intended to be used only for moving equipment from one location to another under RSMeans, and cannot be used for 'adjusting' other unit costs in surety to Clive." The context of that statement should receive consideration. EnergySolutions had proposed using the City Cost Index within RSMeans across the board, including the items normally considered and aggregated under General Mobilization. That statement was a reminder to EnergySolutions that the City Cost Index formulae had specific limitations to their use. The manual identifies to what the City Cost Index applies: "Material and Installation costs, as well as the Total In Place costs for each [Construction Systems Institute] Master Format division. Installation costs include both labor and equipment rental costs."[57,58] EnergySolutions had attempted to extend the mobilization factor to labor rates, then apply the city cost index to the result, which falls outside the areas where the instructions indicate that the method applies.

EnergySolutions' comment recognizes only Specific Mobilization. If EnergySolutions desires to begin accounting for Specific Mobilization in more detail, it must also reach agreement with the DRC on a method of accounting for General Mobilization.

After reviewing the comment and the licensee's proposed language, the Director has determined to retain the language in Condition 73.B.

---

[56] Facilities Construction Cost Data, RSMeans, 2008, p. 1207.
[57] Facilities Construction Cost Data, RSMeans, 2008, p. 1248.
[58] "The Construction Specifications Institute (CSI) is an organization that keeps and changes the standardization of construction language as it pertains to building specifications. CSI provides structured guidelines for specification writing in their Project Resource Manual, (formerly called the Manual of Practice (MOP))." From http://en.wikipedia.org/wiki/Construction_Specifications_Institute. The "divisions" referred to by RSMeans are the headings under which the work items are grouped or organized to assist engineers and contractors in communicating about the project.

EnergySolutions' Comment # 5:

5) CONDITION 73:

As currently Licensed: *The Licensee shall at all times maintain a Surety that satisfies the requirements of UAC R313-25-31 in an amount adequate to fund the decommissioning and reclamation of Licensees' grounds, equipment and facilities by an independent contractor. The Licensee shall annually review the amount and basis of the surety and submit a written report of its findings by December 1 each year for Director approval. At a minimum, this annual report shall meet the following requirements:*

EnergySolutions' Proposed Amendment: *The Licensee shall at all times maintain a Surety that satisfies the requirements of UAC R313-25-31 in an amount adequate to fund the decommissioning and reclamation of Licensees' grounds, equipment and facilities defined in Conditions 10.A and 10.B by an independent contractor. The Licensee shall annually review the amount and basis of the surety and submit a written report of its findings by December 1 each year for Director approval. At a minimum, this annual report shall meet the following requirements:*

EnergySolutions Comment: *EnergySolutions recognizes that Condition 73 provides protection to the State of Utah and its taxpayers against having to manage, close, and stabilize the Licensed Clive facility (in the event that EnergySolutions is defunct or otherwise incapable). While not specifically revised as part of the Divisions' proposed amendment 16 to the License, EnergySolutions has been notified that the Division interprets the surety requirements of Condition 73 as applying not only to grounds, equipment, and facilities directly associated within the physical bounds of radioactive waste disposal site closure and stabilization (e.g., licensed radioactive waste management activities that occur on Section 32), but all other company-owned uncontaminated structures, utilities, evidences of activity unrelated to the actual management of radioactive waste (not located within Section 32). As justification for claiming authority over the surety disposition of unlicensed physical property and assets owned by EnergySolutions, the Division cites concerns (without regulatory justification) over the fact that these unregulated facilities,*

> *"would constitute a nuisance that may lead to potential health and safety risks to the public, and almost certainly to increased security and maintenance costs to the DRC for the closed embankments and fences."*

However, EnergySolutions notes that such interpretation is contrary to the Division's authority:

- *"The applicant shall show that it either possesses the necessary funds, or has reasonable assurance of obtaining the necessary funds, or by a combination of the two, to cover the estimated costs of conducting all licensed activities over the planned operating*

life of the project, including costs of construction and disposal" [emphasis added], [UAC R313-25-30].

• "The applicant shall provide assurances prior to the commencement of operations that sufficient funds will be available to carry out disposal site closure and stabilization" [emphasis added], [UAC R313-25-31(1)].

The use of the terms "licensed activities", "disposal" and "disposal site" within these regulations define the boundaries within which these surety requirements are applicable,

"'Disposal' means the isolation of wastes from the biosphere by placing them in a land disposal facility"

"'Disposal site' means that portion of a land disposal facility which is used for disposal of waste. It consists of disposal units and a buffer zone." [UAC R313-25-2]

Actions performed outside of EnergySolutions' licensed facility are not considered "licensed activities," according to UAC R313-25. As such, the numerous unlicensed and unregulated buildings, structures, and equipment EnergySolutions owns and uses to support its day-to-day business operations (such as the Administration Building located on Clive's Section 29, or EnergySolutions' Corporate Offices in Salt Lake City - Utah) do not fall within the area subject to the License as the Clive "disposal site."

Additionally, these privately-owned and unlicensed buildings and facilities are already governed by various zoning and business regulations of Tooele County and Salt Lake City. In recognition that these structures, in fact, are already regulated by other civil authorities, the Division met with Tooele County Planner, Kerry Beutler on May 20,2013 to judge the manner in which Tooele County addresses EnergySolutions' unlicensed buildings. As a result of their assessment, the Division staff cited their lack of agreement with the manner in which Tooele County is overseeing EnergySolutions' unlicensed buildings and equipment as justification for their inclusion within the Division's jurisdiction. However, EnergySolutions notes that a mere lack of confidence or agreement with the appropriately-empowered civil authority does not allow the Division to assume regulatory authority over facilities or operations for which it has no statutory authority.

Additionally, in the highly unlikely event that EnergySolutions were forced to file for receivership or become otherwise financially incapable of managing its Clive facility, thereby triggering the transfer of the pledged surety funds to control of the Division for oversight of the closure and stabilization of the Clive disposal site, all of its unlicensed buildings, structures, and equipment would come under the control of the court-appointed trustee for satisfaction of outstanding creditors (and not under the direction, ownership, or oversight of the Division) and would be managed in accordance with the applicable laws governing protection of public health, safety and the environment.

Therefore, there is no legal or regulatory justification for the Division's application of its surety requirements to EnergySolutions' unlicensed buildings and equipment.

DRC Response # 5:

EnergySolutions' reference to UAC R313-25-31(1) omitted the following two paragraphs that state:

> (a) decontamination or dismantlement of land disposal facility structures, and
>
> (b) closure and stabilization of the disposal site so that following transfer of the disposal site to the site owner, the need for ongoing active maintenance is eliminated to the extent practicable and only minor custodial care, surveillance, and monitoring are required. ...

Thus, sufficient funds are to be available to complete disposal site closure and stabilization including disposal facility structures in order to eliminate, "to the extent practicable," ongoing active maintenance. This provision does not limit the regulatory application based on whether a structure is "licensed" in the manner described by EnergySolutions' comment. The buildings and facilities now located on adjacent property owned by EnergySolutions fall within the intended application of R313-25-31(1).

The licensee is required to submit a decommissioning plan prior to decommissioning the facility. That plan must include several elements, including "how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and incorporated, as appropriate, following analysis of that advice."[59] Among the items specifically to be considered are the following: "Whether provisions for institutional controls proposed by the licensee [...]Will not impose undue burdens on the local community or other affected parties,"[60] "Whether the licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site,"[61] and "In seeking advice on the issues identified in Subsection R313-15-403(4)(a), the licensee shall provide for: Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning; An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues."[62] This rule applies to planned closure. No provision exists in rule, NRC regulation, or in guidance to address stakeholder concerns in the case of

[59] R313-15-403(4).
[60] R313-15-403(4)(a)(i)(C).
[61] R313-15-403(4)(a)(iii).
[62] R313-15-403(4)(b)(i) through (iii).

default on the part of the licensee and premature closure of the site. Therefore, the DRC has relied upon representations made by EnergySolutions or its predecessor to address this need.

In its 2005 license renewal application, EnergySolutions' predecessor, Envirocare, made the following commitment: "Prior to termination of disposal activities by Envirocare, a detailed decontamination and decommissioning (D&D) plan will be developed. As part of decommissioning, the Site shall be returned as close as practical to its original contour, using preoperational survey data and interpolating uniformly between survey points. This will require that all structures (including any potentially contaminated underground items or material such as pipes and drain basins) be removed."[63] This statement is consistent with representations made at other times, as well.[64] EnergySolutions has included all buildings except the new administration building in calculations of materials to be removed and disposed in all annual surety submittals until the December 1, 2012 low-level waste surety submittal.

The DRC has no assurance that it will not be required by the bankruptcy trustee to maintain or dispose of the buildings in question. From the standpoint of financial assurance, the point at which the trustee makes a determination what to do with those facilities is too late to capture any required funding. In the absence of a public participation process and clear-cut contracts regarding the ultimate disposition of those facilities, inclusion in the surety seems prudent.

EnergySolutions cited a meeting with Tooele County Planner Kerry Beutler. In that meeting, Mr. Beutler stated that the County has no financial provision to maintain or provide security for those buildings, and that the County would look to the DRC to address the need for the appropriate associated closure and post-closure costs.

Buildings left at a remote site like Clive have the potential to become a nuisance to law enforcement, and to the security of the tailings embankments. Persons looking for an opportunity to assemble outside of public view may use these facilities as a gathering point, and subsequently breach or damage fences while accessing the waste disposal embankments. Under such conditions, these intruders could destruct or damage the embankments and be at risk to receive radiation dose potentially in excess of established standards.

Except for certain instances, and with the necessary documentation, licensees are not to include salvage value in estimates for decommissioning.[65] Declining to demolish a

---

[63] License Renewal Application: Radioactive Material License Number UT 2300249, June 20, 2005, p.U-1.
[64] See for example License Renewal Application: Radioactive Material License Number UT2300249, March 16, 2005, p. HH-1.
[65] See for example NUREG-1757, Volume 3, p. A-29. The NRC provided a footnote to this reference that states: "In some instances, NRC may approve credit for salvage value based on its review of explicit documentation provided by the licensee to justify the credit." The DRC has received no explicit data; only general statements.

building because it may have value is a means of claiming a residual value for that building, with the cost of demolition and disposal forming the minimum value that the licensee sees in that facility.

After reviewing the comment and the licensee's proposed language, the Director has determined not to change the language in Condition 73.